

IP-TV Workshop

Peer-to-peer (P2P) file sharing has become increasingly popular, accounting for as much as 70% of Internet traffic by some estimates. Recently, we have been witnessing the emergence of a new class of popular P2P applications, namely, P2P audio, and video streaming. While traditional P2P file distribution applications target elastic data transfers, P2P streaming focuses on the efficient delivery of audio and video content under tight timing requirements. Still in its infancy, both live and on-demand P2P streaming have the potential of changing the way we watch TV, providing ubiquitous access to a vast number of channels, personalizing your TV experience, and enabling roaming TV services.

To date, a number of architectures have been suggested by using either the tree-based push approach (e.g., Narada and SplitStream) or the mesh-based pull approach (e.g. CoolStream). Further improvements are possible by taking advantage of advanced source and channel coding techniques such as layered coding, multiple description codes, fountain codes, and network coding. Given the initial success of P2P live streaming, questions still remain about how to extend the existing peer-to-peer systems to support advanced applications with more stringent requirements such as video-on-demand services. Furthermore, with incipient deployment of IPTV systems, there are still interesting open research challenges on how P2P media streaming can complement IPTV systems, providing advanced VOD features, and enabling access to a larger selection of content.

The aim of the workshop is to gather a group of experts presenting incipient work in this area, generating discussions around the technical challenges and future of p2p streaming and iptv systems.

This workshop solicits original state-of-the-art works addressing all aspects related to supporting peer-to-peer streaming from both theoretical and implementation aspects. Topics of interest:

- Architectures for live or on-demand P2P streaming
- Topology design and locality aware P2P system
- Performance evaluation and analysis
- Applications of advanced coding techniques
- Security issues
- Provisioning and dimensioning
- Content partitioning and block scheduling algorithms
- Peer-matching algorithms for efficient media distribution
- Integration with IPTV systems

Workshop Program:

Friday August 31	
8:50 - 9:00	Welcome
9:00 - 9:45	Keynote 1: Experiences with PPLive Gale Huang, PPLive Software Architect
9:45 - 10:30	Keynote 2: Understanding the Power of Pull-based P2P Streaming Protocol: We can do even better Qian Zhang, Associate Professor, Hong Kong University of Science and Technology

10:30 - 11:00	Coffee Break
11:00 - 12:15	Session 1: Incentives and Security
Using Layered Video to Provide Incentives in P2P Live Streaming Zhengye Liu, Yanming Shen, Shivendra Panwar, Keith Ross, and Yao Wang Resource and Locality Awareness in an Incentive-based P2P Live Streaming System Fabio Pianese and Diego Perino The Pollution Attack in P2P Live Video Streaming: Measurement Results and Defenses Prithula Dhungel, Xiaojun Hei, Keith Ross, Nitesh Saxena	
12:15 - 13:30	Lunch Break
13:30 - 14:15	Keynote 3: Architecture for IPTv Distribution: Cooperative P2P and Multicast K. K. Ramakrishnan. AT&T Labs
14:15 - 15:05	Session 2: Modeling
The production of peer-to-peer video-streaming networks <input type="text"/> Dafu Lou, Yongyi Mao, and Tet Yeap An Analytical Study of Low Delay Multi-tree-based Overlay Multicast <input type="text"/> Gyrgy Dn and Viktoria Fodor	
15:05 - 15:35	Coffee Break
15:35 - 16:50	Session 3: VoD and Streaming
Enabling DVD-like Features in P2P Video-on-demand Systems <input type="text"/> Nevena Vratonjic, Priya Gupta, Nikola Knezevic, Dejan Kostic, Antony Rowstron Peer assisted VoD for set-top box based IP network	

Vaishnav Janardhan and Henning Schulzrinne

An Alliance Based Peering Scheme for Peer-to-Peer Live Media Streaming

16:50 - 17:00	Concluding Remarks
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